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THE MARKET FOR FATS, OILS, AND OILMEAL IN Pakistan

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Foreign Agricultural Service

U. S. DEPARTMENT OF AGRICULTURE

Foreword

In the late 1950's, many nations formerly dependent on the United States for a large share of sorely needed direct assistance and economic aid made near-phenomenal strides in both business and agriculture. Japan and the industrial countries of Western Europe are good examples of these nations which have moved from "aid" to "trade" status. Yet, economic progress in these countries came about with little fanfare or scant notice. With the coming of economic betterment, U.S. assistance programs disappeared, and these countries became, and continue to be, good-to-excellent dollar markets for U.S.-produced agricultural commodities, both raw and processed.

Soybeans and soybean products shared in, and are a prominent part of, this prosperity. Concurrently, the soybean industry of the United States amalgamated into a worldwide promotional organization called the Soybean Council of America, Inc. This organization has been pressing hard on a global basis for increased use of the oil and protein fractions of the processed soybean, as well as the raw soybean. Its policies do not seek to displace any oilseed or oil-source material normal to the countries where it is promoting soybeans and soybean products. Rather, it is seeking increased consumption of all fats, oils, and proteins. The result of such a campaign has been to materially step up exports of U.S. soybeans and soybean products to accustomed user-countries and to sell soybean products, particularly soybean oil, in entirely new markets.

Thus, the 1960's appear to be the time for a comprehensive, intensive review of markets in countries where opportunities appear to exist--or seem imminent--for new business or expanded trade between U.S. firms and their counterparts (or foreign government agencies). That is why, in late 1960, the Foreign Agricultural Service began this review, the second of which is reported here. The first, "Analysis of the Fats and Oils Market in Egypt and Syria," was issued January 1961 as FAS-M-107.

In the present review, and the others to come, basic market data concerning all aspects of oilseeds and oilseed products were obtained by personal contacts with key sources.

The primary intent of this series is to provide the U.S. vegetable oilseeds and oilseed products industry with information upon which it can make intelligent decisions as to possibilities, and degree of participation or activity, in a given market.

Walter W. Sikes, Director
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THE MARKET FOR FATS, OILS, AND OILMEAL IN PAKISTAN

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Summary

In the next 5 years, Pakistan's imports of edible oil are expected to increase sharply, reaching an annual level of 200,000 metric tons by 1965 compared with about 50,000 tons in 1960-61. In East Pakistan, they are expected to triple in the 5 years, reaching 75,000 metric tons in 1964-65. In West Pakistan the rise is expected to be even greater--from about 25,000 tons in 1960-61 to 125,000 tons.

Increased consumption of vegetable fats and oils in the next few years is expected to result from a continuing downward movement in prices due to lower unit production and distribution costs and increased competition for a market that is developing quality consciousness. As private and government development projects are completed, increased per capita income will further stimulate consumption of edible and industrial fat products.

In 2 years -- by 1963 -- West Pakistan's vanaspati (vegetable ghee) capacity is expected to expand from today's 36,000 metric tons to 132,000 tons. This industry is a market for U.S. soybean and cottonseed oil, currently only in drums although bulk facilities are under consideration for Karachi.

Pakistan in 1960 exported an estimated 88,000 metric tons of oilcake, including 65,000 tons of decorticated cottonseed cake from West Pakistan and 20,000 tons of single-pressed rapeseed cake. Oilcake from Pakistan is exported under a preferential export payments system. The high-oil-content cake finds a ready market in Western Europe.

Pakistan produces about 6,000 metric tons of mixed feeds. Farmers still feed a large quantity of whole cottonseed, undecorticated undelinted cottonseed cake, and "green" high-oil-content rapeseed cake. The domestic industry is growing slowly, and as commercial poultry production increases, the demand for higher protein feeds will grow.

The major industrial use of fats and oils is in the soap industry. Soap production is estimated at 40,000 to 45,000 metric tons and is expanding. Tallow is the primary soap fat, although Ceylonese coconut oil and domestic cottonseed oil are also used.

The Government of Pakistan recognizes the need for increasing the country's

supply of edible oils, particularly for the low-income groups, and is taking steps to do so: Opening the Chalna port; increasing the number of licensed importers; eliminating import duties on edible oils; liberalizing the licensing of materials required for refining oil products; and may consider the lowering of importers' bank margin requirements.

Sources of Supply

Vegetable Oilseeds

Foreign trade plays a relatively insignificant role in Pakistan's supply of oil-bearing material. The only one imported in significant quantities is Ceylonese copra, with average imports estimated at about 1,000 metric tons. As for exports, none of Pakistan's cottonseed, sesame, peanuts, and linseed are shipped abroad, and rape and mustardseed exports are negligible, averaging less than 1,000 tons. Castorbean exports range between 2,000 and 4,000 tons annually and are destined primarily for Western Europe, particularly the Netherlands, France, and the United Kingdom.

In 1960-61, Pakistan produced an estimated 933,000 tons of oilseeds -- slightly more than the previous year's 919,000 tons. In recent years, production has tended to increase slightly, reversing the earlier downward trend.

The major oil-bearing materials produced in Pakistan are cottonseed, rape, mustard, sesame, peanut, linseed, and castorbean. In West Pakistan the most

TABLE 1.--Estimated production of principal oilseeds, selected years

Type	1959-60	1960-61	Forecast 1961-62
	1,000 m.t.	1,000 m.t.	1,000 m.t.
Cottonseed	520	585	590
Rape and mustard	333	280	300
Sesame	34	34	34
Peanut	13	14	14
Linseed	14	14	14
Castorbean	5	6	6
Total	919	933	958

U. S. Embassy, Karachi, Pakistan.

important of these is cottonseed. Its production appears to be stabilizing at about the current level but may increase slightly as irrigation programs are successful. Rapeseed and mustardseed, grown primarily in East Pakistan, also appear to be leveling off. Production of peanuts, almost the entire output of which is consumed as whole nuts, is increasing slowly. Linseed and castorbean production, processed for inedible oil products, is being maintained.

The Second Five Year Plan, 1961-65, provides for an increase in oilseed production of 8 percent, or to a level of 965,000 tons by 1965.[1] Significantly, this planned rate of increase in oilseed production is less than the current and projected increase in the population. Thus, the domestic production of oilbearing materials is expected to play an ever decreasingly important role in the supply of vegetable oil in meeting the increasing demand of the rapidly expanding and urbanizing population.

The emphasis in this Plan will be to expand food grain acreage, improve irrigation techniques, and increase the supply of fertilizer. With the exception of the long-term effects on cotton production resulting from expanded and improved irrigation and increased use of nitrogenous fertilizers, Pakistani oilseed production is not scheduled to receive any major stimulus, and the modest planned production goals appear realistic.

Vegetable Oils

Pakistan produces much of the vegetable oil it uses. Unlike oilseeds, vegetable oil is imported in significant quantities. In 1960-61, imports are expected to total about 55,000 metric tons, including 50,000 tons of U.S. cottonseed and soybean oil and 5,000 tons of coconut oil from Ceylon.

Domestic production in 1960-61 from a crush of approximately 700,000 metric tons of oil-bearing materials was estimated at 132,600 tons -- only slightly higher than the 130,000 tons produced in the previous year. Approximately 125,600 tons of this total was consumed for food or food-product use. The remaining 7,000 tons consisted of inedible castorbean oil and industrial linseed oil.

While the government has announced no vegetable oil production goals under the Second Five Year Plan, achievement of the vegetable oilseed production plan would appear to support a 1965 production goal of about 148,000 tons of vegetable oil, including 8,000 of inedible oils. Some additional increase in output could be achieved by using a larger portion of the total supply of cottonseed. Currently, only about 65 percent of the cottonseed is utilized for crushing. This step, however, is contingent on the economy of establishing new processing facilities equipped with decorticating and delinting equipment and on improvement in collecting and distributing cottonseed.

[1]The official goal of 965,000 tons probably refers only to the country's major edible oilseeds, cottonseed, rape and mustard, and sesame whose combined output in 1959-60, the base year for the Second Five Year Plan, totaled 887,000 tons, or about 8 percent below the planned 1965 goal.

Quantitative agricultural and trade data for Pakistan are officially reported in long tons (2,240 U.S. pounds) while plant output, capacity, and requirement data are reported in metric tons (2,204.6 U.S. pounds). All quantitative data used in this report are considered "estimates" in metric tons.

TABLE 2.--Estimated production of principal types of vegetable oil

	1959-60	1960-61	Forecast (1961-62)	Forecast (1964-65)
	1,000 m.t.	1,000 m.t.	1,000 m.t.	1,000 m.t.
Cottonseed	55.0	60.0	60.0	70.0
Rape and mustard	58.0	55.0	56.0	60.0
Sesame	10.6	10.6	10.6	10.0
Total: Edible oils	[1] 123.6	[1] 125.6	[1] 126.6	[1] 140.0
Linseed	6.0	6.0	6.5	7.0
Castorbean	[2] 1.0	[2] 1.0	[2] 1.0	1.0
Total: inedible oils	7.0	7.0	7.5	8.0
Total all vegetable oils	130.6	132.6	134.1	148.0

Office of the U. S. Agricultural Attache', Karachi.

[1]Excluding 5,000 tons oil equivalent of peanuts consumed as peanuts.
[2]Excluding oil equivalent of castor bean exports.

Animal Fats

Production of animal ghee, the most important source of animal fats in Pakistan--made from buffalo's milk and cow's milk -- is estimated at about 110,000 metric tons, and is expected to remain at about that level. (No statistical data are available on production of animal products or on livestock numbers.) Production of slaughter fats, largely from buffalo, cattle, and sheep, is estimated at about 35,000 tons, including 10,000 tons of inedible beef, mutton, and goat tallow. Output of these inedible fats is also expected to remain near the present level. Additional feed supplies scheduled to be made available under the Second Five Year Plan will probably not be fed goats and sheep.

Most of these feed supplies will go to the buffaloes and cattle. Thus, production of animal fats and tallow is expected to increase slightly, even though buffalo and cow numbers are likely to remain near their present levels: 7 million head of buffaloes and 9.5 million to 10.5 million cattle.

Oilcake and Meal

Pakistan does not import oilcake or meal; it is a significant exporter, however. Its total exports of oilcake and meal in 1960 are estimated to have reached 88,162

metric tons -- somewhat above the 1959 level of 77,564 tons. In 1960, cottonseed cake comprised the major export category, with 65,135 tons destined almost entirely for the United Kingdom. In that year also, 19,965 tons of rapeseed cake with a high oil content and low protein value were exported, primarily to the hard currency countries of Western Europe. In 1959, rapeseed cake was the principal oilcake exported, with the Netherlands the principal importer.

Pakistani production of oilcake and meal in 1960-61 was estimated at 617,000 metric tons, slightly below the previous year's level of 626,100 tons. Production of oilcake is expected to increase at a rate of approximately 1 to 2 percent annually through 1965.

Cottonseed, which accounts for about 60 percent of the total, is the most important type of cake produced in Pakistan, with nearly all of the country's output located in the Western Province. Mustard and rapeseed cake production, which accounts for about one-third of the national total, is centered in East Pakistan. Sesame and linseed cake comprise the remainder.

Trends in Requirements

Edible Fats and Oils

In 1960-61, distribution of edible oils in Pakistan is estimated to have totaled about 297,800 metric tons. Per capita consumption is estimated to have achieved a level of about 7.3 pounds, including nearly 11 pounds in West Pakistan but only about 3.3 pounds in East Pakistan.[2]

The Government of Pakistan is taking steps to increase the extremely low level of fat consumption in the country. In West Pakistan, the vanaspati (ghee) industry is undertaking a gigantic expansion program, and the requirements of the industry for vegetable oil are expected to increase materially.

Per capita income in West Pakistan continues to grow and, with the vast new development projects soon to be activated, will show a further marked increase. Since domestic production of edible oils is expected to increase only slightly, substantially larger imports will be required to fulfill the needs of the economy. If imports of vegetable oil into West Pakistan are increased from the current level of 25,000 metric tons to 125,000 tons in 1964-65, to meet estimated requirements, per capita consumption will increase to nearly 15 pounds.

East Pakistan is one of the major fat-deficit areas of the world. Per capita income is extremely low, capital for payment of imports is in short supply and commands unusually high interest rates, and the port handling and internal distribution facilities are limited. The limited vanaspati industry of the Province is operating well below capacity, and there are no plans for expansion. However, the consumer price of oil is high and any reduction is likely to result in a sharp increase in fat consumption.

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[2]Based on following: West Pakistan, vegetable ghee 40,000 metric tons, animal ghee and butter 100,000 tons; vegetable oils 60,000 tons; East Pakistan, vegetable ghee 5,000 tons, animal ghee and butter 11,000 tons, vegetable oils 60,000 tons.

TABLE 3.--Edible fats and oils supply and disposition[1]

	1959/60	Current 1960/61	Forecast 1964/65
	1,000 m.t.	1,000 m.t.	1,000 m.t.
Supply:			
Stocks;			
Edible oils	3.0	10.0	25.0
Slaughter fats	1.0	1.0	1.0
Ghee[2]	5.0	5.0	5.0
Total	9.0	16.0	31.0
Production:			
Edible oils	128.6	130.6	145.0
Slaughter fats	25.0	25.0	30.0
Ghee[2]	110.0	110.0	110.0
Total	263.6	265.6	285.0
Imports:			
Edible oils	30.0	[3]50.0	200.0
Slaughter fats	1.0	2.0	5.0
Total	31.0	52.0	205.0
Total supply:			
Edible oils	161.6	190.6	370.0
Slaughter fats	26.0	28.0	36.0
Ghee[2]	115.0	115.0	115.0
Total	302.6	333.6	521.0
Distribution:			
Exports	-	-	-
Edible use:			
Edible oils	146.6	167.8	335.0
Slaughter fats	20.0	20.0	20.0
Ghee[2]	110.0	110.0	110.0
Total	276.6	297.8	465.0
Industrial use:			
Edible oils	5.0	5.0	7.0
Slaughter fats	5.0	7.0	15.0
Total	10.0	12.0	22.0
Stocks:			
Vegetable oils	10.0	17.8	28.0
Slaughter fats	1.0	1.0	1.0
Ghee[2]	5.0	5.0	5.0
Total	16.0	23.8	34.0

[1] Based on October/September crop year.
[2] Including butter.
[3] Includes 10,000 tons of oil currently under contract.

TABLE 4.--Estimated import requirements of edible fats and oils

Marketing year	West Pakistan	East Pakistan	Total
	1,000 m.t.	1,000 m.t.	1,000 m.t.
1960-61	[1]25	[1]25	[1]50
Forecast:			
1961-62	70	40	110
1962-63	100	55	155
1963-64	115	65	180
1964-65	125	75	200
4-year total	410	235	645

[1]Includes contracted imports not delivered.

Numerous government proposals to facilitate the import of vegetable oils are currently under consideration. It is conservatively estimated that imports of U.S. vegetable oil will increase from a 1960-61 level of 25,000 metric tons to a 1964-65 level of 75,000 tons. Even then, increase in imports will only raise consumption to about 5 pounds per capita. If the level of imports into East Pakistan -- the Province with the greater population -- could be brought up to the import level of West Pakistan (125,000 tons) by 1964-65, per capita consumption in the East would about equal today's per capita consumption of edible fats and oils for the whole country -- 7.3 pounds.

Oilcake and Meal

Although Pakistan does not import oilcake or meal, a market for compound feeds is gradually being developed. There are many barriers to rapid development of a mixed feed industry in Pakistan. For one thing, no organized consumer market exists, so eggs are sold ungraded, by the unit, thus removing one major incentive for better poultry feeding.

Also, farmers are acutely aware of feeding costs, but have had no experience in measuring feed costs in terms of increased future output of eggs, milk, ghee, and so forth.

In order for compound feeds to sell, they must be priced competitively with oilcake, generally of undecorticated cottonseed, of a lower protein value and a high oil content. Oilcake of higher protein value, generally dark brown in color, will sell at a discount to poor-quality "green" cake. Compound feed output in 1961 is expected to total about 6,000 metric tons.

The buffalo is the most important category of livestock in Pakistan, providing milk, the major source of animal ghee, and draft power. The main feed of the buffalo is a combination of gram (pulses), shokar (wheat bran), oilcake (undecorticated cottonseed). In some areas "mutri" and rapeseed cake are also important.

Buffaloes are maintained by three categories of owners. In villages, herds of up to eight are maintained by farmers for work animals and for milk, which is converted to ghee. Compound feeds are fed to the buffalo only after calving, and generally for a period up to 3 months. Almost all the buffalo's milk from these herds, which contains a butterfat content of 7 to 7.5 percent, is converted into ghee. (The method of ghee production is presented in the Appendix.)

In and near cities, buffaloes and cows are maintained by "gujars", or milk traders, who maintain their herds strictly for their fluid milk value, feeding a large portion of oilcake and compound feeds.

The last category of ownership is the government farm, where buffaloes and cows are maintained for experimental and breeding purposes.[3] In addition to buffaloes, these farms have many red Sind cows. The Army farms, particularly at Okara, maintain a large inventory of livestock including Friesian cows, Jerseys, and similar breeds.

Progress in developing a market for compound feeds for use in poultry feeding has been slow. Most chickens are raised as scavengers, although at least 3 large commercial-size poultry farms exist and 2 new large government-owned farms are being established.[4] Government farms for meat-type birds are expected to be established near Abbotabad and Hyderabad, and house up to 4,000 birds each. Compound feed for poultry being produced and sold in West Pakistan is of three types --

TABLE 5.-- Production of oilcake and meal by type

Type	1959-60	1960-61	Forecast 1961-62
	1,000 m.t.	1,000 m.t.	1,000 m.t.
Cottonseed	377.0	370.0	372.0
Mustard and rape	210.0	208.0	212.0
Sesame	19.6	19.6	19.6
Linseed	19.5	19.5	19.5
Total	626.1	617.1	623.1

U. S. Embassy, Karachi, Pakistan.

[3]Located at: Nabasar Road, Mirpurkhas, Dadu, Tando Mohammad Khan, Khairpur, Pahri (in southern West Pakistan); Mamoonabad, Montgomery, Kadirabad, Bahadur-Nagar, Kullurket Court (in northern West Pakistan).

[4]Landhi Poultry Experimental Station, Tripoli Poultry Farm, Quetta Poultry Farm.

pellet, baby chick mash, and laying mash. The pellet mixture is mainly cereals (corn) and matri; baby chick and laying mash consists of till (sesame) cake, peanut cake, fish meal, blood meal, vitamin A, D & E, and antibiotics. Meal is sold in bags of 2 maunds (164 pounds) and packets of 5 and 10 pounds. There is a shortage of suitable oilcake for use in balanced poultry rations, since a large portion of the peanuts produced are consumed whole, sesame production is very small, and cotton-seed cake is unsuitable.

East Pakistan

The Market and the Market Place

The Province of East Pakistan with over 50 million inhabitants in an area of only 54,501 square miles -- about the size of North Carolina -- supports the bulk of the country's population: With but one-seventh of the country's total area it supports about four-sevenths of the people.

The inhabitants of the area are predominantly Muslim, although Hindus represent an important minority particularly in the north. The standard of living is low, both on an absolute basis and compared to West Pakistan. While no accurate data are currently available, per capita income during the Second Five Year Plan was estimated as equivalent to about $45.00 a year and has failed to increase in recent years, for the population is increasing more rapidly than the economy. Limited government and private investment, the high cost of electric power, and a marked shortage of skilled labor have been significant deterrents to rapid industrial expansion in East Pakistan. By early 1962, a major new U.S.-sponsored power project near Chittagong is expected to relieve much of the current power shortage and spur industrial expansion.

The marketing area for fats and oils of East Pakistan consists of a limited number of urban areas -- Dacca, Chittagong, Khulna -- and a vast rural hinterland served mainly by the country's numerous rivers and their tributaries.

Other transportation is highly limited. For example, a single-line meter-gage railroad serves the area east of the Ganges/Brahmaputra Rivers, embracing the largest portion of the Province's population including the Provincial capital, Dacca; the largest seaport and center of the vegetable oil industry and trade, Chittagong; the area of highest population density the Tipera District, and tea garden area in Sylhet.

The western portion of East Pakistan, including the rapidly growing industrial and port area of Khulna and such other important cities as Jessore, Rajshahi, and Bogra is serviced by broad-gage railway with its double track having a terminal point in Calcutta. Only limited freight, however, is imported by rail from India. The western portion of East Pakistan has been a neglected marketing area, one which can be developed by re-emphasizing the advantage of the Chalna anchorage for imported U.S. vegetable oils.

The most significant characteristic of the consumers of fats and oils in East Pakistan is their taste for liquid mustardseed oil. While hardened fats have a

selective well-sustained market, liquid edible oils comprise the bulk of the Province's fat consumption. The unusual demand for mustardseed oil, with its sharp taste and distinctive odor, bears a direct relationship to the generally humid, hot temperature of East Pakistan, located in the delta region of the Ganges River. Regardless of the true source of this taste preference, it establishes the standard for the marketing of other edible oils.

In addition to home consumption, the major fats and oils consumer groups of East Pakistan are the vanaspati manufacturers, the biscuit and baking industry, and the commercial soap and related chemical industries. While reliable quantitative data by group are not available, the most significant consumer group, as expected, is the rural family.

About 95 percent of the population of East Pakistan is rural. While Dacca with a population of over 500,000 and Chittagong with its 300,000 inhabitants are important commercial centers, small towns and villages constitute the principal markets. The male is the family's chief provider, and significantly does virtually all of the buying. The female is a rare sight outside of the protection of her thatched village home. In the rural household, edible oils are particularly important in the preparation of fish, a major source of protein and, by Western standards, a staple food in the East Pakistan diet. Some vegetable oil is used in various rice preparations, including the popular curried dishes.

The marketing of vegetable oils in the rural areas is an interesting undertaking; all of it is marketed as mustard oil. Mustard oil produced in the village by a small, crude mill is drummed or packaged in 35-pound gasoline tins, the residual gasoline having been removed by burning. This mustardseed oil is then mixed with fully refined, completely deodorized U.S. soybean oil, placed in tins labeled as "pure mustardseed oil", and sold to village wholesalers or retail stores. The retail outlet sells the product as such to the male member of the household during his weekly shopping trips. The buyer usually brings his own container, one which has usually been in the family for years, and which is filled to an exact spot in exchange for his rupee payment.

The village fats and oils "wholesaler" is a true tradesman. In recent years the government-licensed importers, concentrated in the commercial areas of Chittagong and Dacca, have found a ready market for this oil in the upriver village wholesaler. In fact, today, many licensed importers never see their consignment of imported oil but forward it directly to their many upcountry wholesale agents. Here the oil, imported at a substantial discount to mustardseed oil, is blended with the costlier product, and sold at a slight discount, as "mustardseed oil". By far the most popular oil for blending purposes is fully refined, completely deodorized U.S. soybean oil. This village wholesaler has developed an uncanny ability to blend his oils, and the generally unsuspecting male buyer merely feels he is getting a "discount" or sale price on his mustardseed oil. It is these country wholesalers who empty the imported oil into used gasoline containers to assure themselves that they have received the exact product weight stated in the purchase order. A "short weight" to them may be far less than 1 pound of oil per 500-gross-pound drum. It is here that the "tare" weight problem becomes most acute.

The vanaspati industry is engaged in a difficult promotional effort to develop a market in East Pakistan. Vanaspati is referred to in the trade as vegetable ghee. Just as soybean oil is likened to mustardseed oil, vanaspati is promoted as similar to animal ghee, a "carriage trade" product retailing 3 times the price of vegetable ghee. Vanaspati produced from imported and hardened U.S. soybean and West Pakistani or U.S. BPSY cottonseed oil is gradually developing markets in the larger urban centers and in the traditional Hindu areas of the northern region, where vanaspati and animal ghee have long been known. In order to facilitate sales, vanaspati retains the white color of animal ghee. Vanaspati is marketed in retail shops in tins of 2, 5, 10, and 35 pounds.

A secondary market for vanaspati is the commercial baking and biscuit industry. In East Pakistan, commercial shortening for baking is still not available from local sources, although at least one manufacturer is interested in developing such a product. Commercial bakers report they use 1/2 to 3 pounds of vanaspati per 100 pounds of bread, 19 pounds per 100 pounds of sweet cookies, and 20 pounds per 100 pounds of salted biscuits. Few bakers know the composition of the vanaspati they consume. Coconut oil is the only vegetable oil identified by the bakers, and it is used for greasing the baking pans. Some specialty bake shops take great pride in their exclusive use of butter.

The government prohibits the use of edible oil in soap making or other inedible uses. While in earlier years, some U.S. soybean oil had been hardened for use in soap and U.S. tallow was widely used, the current trend is toward Australian tallow and Ceylonese coconut oil. East Pakistani soap manufacturers report some most unsatisfactory experiences in using soybean oil in soap, and have numerous complaints on the quality of U.S. tallow imports. Much of the difficulty in handling U.S. products, particularly hardened soybean oil, appears to come from initial inexperiences, which has now been overcome. Ceylonese coconut oil is widely used as a hair conditioner.

Vegetable Oil Industry

A 1958 industrial survey of East Pakistan disclosed a total of 68 oil mills employing upward of 1,600 workers and using mechanical power. In addition, the Province has 2 modern vanaspati plants and 8 soap factories which employ an additional 500 people. There is no estimate of the number of animal-powered small mills scattered throughout the Province whose production may be classified as noncommercial, primarily supplying village requirements. The Province's largest commercial oil mills, soap plants, and the 2 vanaspati plants are concentrated in the largest cities, Dacca and Chittagong, permitting easy access to imported oilseeds and vegetable oils. The smaller mills are well distributed upcountry, and rely on the availability of locally produced oilseeds.

The oil mills of East Pakistan are very similar in method of operation, antiquity, emphasis on heavy labor inputs, type of seeds processed, and marketing procedures for oil and residual cake. Information available on 62 of the Province's commercial oil mills provides the following number of firms in each category of output:

Annual Output of oil (in metric tons)	Number of firms
Over 5,000	2
1,000 to 5,000	11
500 to 1,000	8
Less than 500	41
Total	62

Employment data (in Appendix) are less meaningful since many of the vegetable oil plants are also producers of other products, e.g., flour and soap. At least 4 of the commercial mills, however, report over 100 workers on the basis of average daily employment.

The more common oilseeds processed during the year include mustard and rapeseed (February, March, and April), linseed (April), peanuts (May and June), sesame when available, and copra (July and August). Most of the seed is produced domestically, and moves only a short distance to the mill. Internal, local transport is primarily by animal-drawn cart but sometimes by truck if the mill is located in a larger more-distant town. A large quantity of seed -- 40,000 to 50,000 tons of rape and mustardseed -- is imported annually from West Pakistan. The entire quantity arrives bagged and is usually processed in the mills at Chittagong and Dacca. Movement of imported seeds to processing centers in the interior is generally by rail, although during the monsoon season some is moved by river boats. Smaller quantities of kapok and castorseeds are also processed in East Pakistan.

The method of oil processing is unique by Western standards. Commercial mills, except the copra plant at Khulna, receive their seeds in bags. After hand cleaning, the seeds are placed by hand into a battery of power-drive mortars, all in rows, the inside of which are lined with wood -- reportedly to preserve the flavor. The mechanically belt-driven pestle moves in on eccentric arc and grinds the seed, from which the oil runs out in a thin stream. Old gasoline tins, cleaned by burning, are placed at the base to collect the oil. When the seed is spent, the mortar is hand cleaned, the material being transferred to a bin which feeds a cooker for the expellers. The oil from the expeller barrels is filtered through a standard filter press to remove fines and meal which is repressed. As Dr. Edward James, Technical Consultant for the Soybean Council of America comments, "the finished mustardseed oil after filtration is a clear yellow color, has an extremely pungent odor, the free fatty acid of this oil probably varies over wide limits". The oil is then hand sealed in tins of 5, 10, and 35 pounds and marketed. The very high cost of electric power contributes to the heavy reliance on manual labor, and poor lighting.

At least three kinds of oilseeds, including mustardseed, peanuts, and linseed, were observed processed in this manner. The peanuts were undecorticated when placed in the mortar. Mustardseed, which contains from 30 to 33 percent oil, yields about 20 percent oil in the mortars and an additional 6 percent in the double pressing. The recovery from linseed, which contains about the same oil content, is similar, and undecorticated peanuts with a slightly higher oil content, yield no better results. The residual oilcake from these oilseeds, high in oil content and correspondingly low in protein, is generally exported to Western Europe for badly needed hard currencies under the Bonus Voucher System, which provides a premium for the

exporter. The only good domestic market for oilcake appears to be in the Bogra district, which consumes large quantities of rapeseed cake for fertilizer on potato fields.

Two of the country's modern vanaspati plants are located in East Pakistan, Dacca Vegetable Oil and Allied Industries, Ltd., and Hasni Vanaspati Manufacturing Co., of Chittagong. These plants contain the Province's only deodorizing equipment and the only hydrogenation units. The Dacca plant, which went into full-time operation in late 1960, employs Sharpless Low Loss refining equipment, and both plants have Rose, Downes converters. The Hasni plant produces vanaspati exclusively from cottonseed oil, primarily imported from the United States as Bleachable Prime Summer Yellow. At the Dacca plant, 25 percent U.S. hydrogenated soybean oil is mixed with 75 percent cottonseed oil to produce vanaspati. This plant is also marketing a fully refined, but unwinterized cottonseed cooking oil under a vegetable oil label. This is the only such product currently available in East Pakistan. (Complete plant data for Dacca Vegetable Oil and Hasni Vanaspati are available in the Appendix, as is the processing technique used in the production of vanaspati.

Soap production in East Pakistan is estimated at about 17,000 metric tons, including 16,000 tons of laundry soap and 1,000 tons of toilet soap. Unwrapped bars account for about 16,100 tons and contain 45 to 55 percent T.F.M., while 400 tons of wrapped household soaps contain a T.F.M. up to 63 percent. Tallow and coconut oils are the primary soap stocks in East Pakistan, with foots from refined oils relatively unimportant.

Prices and Price Patterns for Edible Oils

Retail price data and wholesale price indices are available for selected fats and oils marketed in East Pakistan. They show that not only are the retail prices high, particularly when consideration is given to the extremely low per capita income, but the relation of prices indicates the high position of mustardseed oil. While the retail price of local mustardseed oil declined about 4 percent in the last year, the wholesale price index for that oil fell 10 percent. Vegetable ghee, or vanaspati, prices have remained steady by comparison.[5]

No retail price for soybean oil is available since this oil is sold only in adulteration with mustard oil. (The price of fully refined, deodorized U.S. soybean oil shipped in drums to Chittagong has been added to the data in table 6 to permit a comparison.) The continued slight weakening in the price of mustardseed oil may be directly related to the increased volume of U.S. soybean oil, permitting the marketing of a cheaper "blend" of mustard oil. In view of the price advantages of using a mustard-soybean blend oil, the volume of soybean oil imported into East Pakistan continues to enjoy an excellent expanding market.

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[5]Under the Martial Law Regulation No. 42 the following maximum wholesale price of vegetable ghee, vanaspati, in port towns in East Pakistan was established, c. and f. value Chittagong/Chalna:

	Cents per pound
35-lb. tin	34
10-lb. tin	35
5-lb. tin	36
2-lb. tin	38

TABLE 6.--East Pakistan (Dacca): Year-end retail prices of selected fats and oils

Item	1959[1]	1960[1]
	Cents per lb.	Cents per lb.
Mustard oil, local	31	30
Karachi	29	27
Vegetable ghee, local, 35-lb. tin	37	37
Peanut oil, sup. quality	20	22
Butter, local best	[2]	84
Butter, tinned	[2]	91
Animal, ghee	85	84
U.S. soybean oil, c & f, Chittagong	[2]	[3]15
Fully refined deodorized, drummed		

[1]Government of East Pakistan, Weekly Information Service, December 30, 1960. Provincial Statistical Board of Commercial and Industrial Intelligence, Dacca. Volume XII, No. 53, Page 23.

[2]Not available.

[3]Computed from contract price data.

TABLE 7.--East Pakistan (Dacca): Monthly retail prices, mustardseed oil and animal ghee, 1960

	Mustardseed oil (local mill, first quality)	Animal ghee (local, first quality)
	Cents per lb.	Cents per lb.
January	32	85
February	32	85
March	34	85
April	33	85
May	32	79
June	32	79
July	32	79
August	32	81
September	31	85
October	31	85
November	31	85
December	30	84

Note: All conversions of domestic currency are based on the official rate, 4.76 rupees to the U.S. dollar.

Monthly average retail prices for mustardseed oil at Dacca during 1960 show a marked stability. Only a slight price increase is evident in early spring. Importers have reported that vegetable oil imports are most needed during October and March, when local prices tend to increase as a result of tight oilseed supplies.

Transportation

Inland Waterways. East Pakistan is traversed by many large rivers, which provide the country's most important means of transportation. More than 2,600 miles of these waterways are navigable throughout the year; the rest are navigable only during the June-September monsoon season. Over 1,000 powered vessels and numerous other craft provide year-round transportation, the largest carrier being the Joint Steamer Companies, which handles between 65 and 70 percent of the total cargo moved by powered craft.

Ports and Port Handling Facilities. The two major ports of East Pakistan are Chittagong and the Chalna anchorage, 32 miles downriver from Khulna. The ports have little similarity, either in facilities or purpose. Chittagong, the area's largest and busiest port, is primarily engaged in handling imports, while the Chalna anchorage is an "export" port developed mainly to relieve the excess strain on the Chittagong facilities and provide an outlet for the Brahmaputra area. By way of illustration -- of the 2.3 million metric tons of cargo handled by Chittagong in 1959, about 1.8 million was imports and only .5 million represented exports. In contrast, the Chalna anchorage handled slightly over 800,000 tons total cargo, 200,000 tons of which were imports and 600,000 tons were exports, primarily jute.

Chittagong harbor is located on the Karnaphuli River which, like all rivers in the Province, empties into the Bay of Bengal. The safe, fresh-water drafts are predicted every 3 months, including a.m. and p.m. tides, and published through local shipping agents. These drafts are prepared in consideration of the three Bars (outer, inner, and Gupta Bar) where the depth is maintained at 12 feet, and to which 12 feet may be added to account for daytime high-water tide in order to calculate the draft while entering and leaving the port.

Chittagong port facilities include 17 permanent modern berths, 14 hydraulic cranes, 35-cwt. lifting capacity in operational condition. The cyclones of October 1960 destroyed 2 cranes and the cyclone of May 1961 did further damage to craft in the area. Open paved dumping grounds are sufficient to handle the full capacity of the port. Total port handling capacity approximates 6,850 tons per day when all facilities are operational. Ships have frequently been delayed at the outer anchorage awaiting berthing facilities.

Through mid-1961 all U.S. vegetable oil shipped to East Pakistan has been handled at Chittagong. Ocean freight rates varying between $27.00 and $34.00 per ton of drummed oil is common. The entire quantities arrive in standard 55-gallon (US) drums, marked for consignment to any one of the Province's 122 oil importers. Unloading frequently has involved a transfer of a portion of the cargo to lighter or country boats of 50- to 500-ton capacity, some of which are powered vessels. One large East Pakistani importer supplies his own barge of about 500 tons to transfer his consignment of drummed oil to his plant near Dacca. In general, however, oil is off-loaded by the stationary cranes, and held in storage awaiting shipment to the

interior. Chittagong is served by a single-track meter-gage railroad system running north to the Province's largest city, Dacca.

Numerous problems continue to plague the East Pakistan importer of U.S. soybean/cottonseed oil. Complaints generally appear to be concentrated on the drum used in shipment.

Since no bulk handling facilities exist in East Pakistan, shipment in 55-gallon (US) tight-head, Rule 40 ICC 17E drums is recommended. Drums are frequently transferred to lighters which, in East Pakistan, are generally small slow-moving wooden craft, manual or wind powered. In the extended time period required to bring this craft to shore, drums are frequently opened, drained, and replaced with saline water. Importers also complain that stencil lettering is not sufficiently large to enable proper speedy identification of the importer, and can easily be removed by smearing oil. Further, many drums are punctured by improper handling with cranes and trucks and by rolling on rough surfaces over extended areas.

Importers have suggested certain modifications in drums used to ship oil to East Pakistan. The importer's name should be at least a 6" stencil (the same size as marks on similar drums of coconut and cottonseed oil imported from Ceylon and West Pakistan). A tin seal should be added, as in the case of imported Ceylonese coconut oil, or a wire link fixed by a lead seal. Steel banding of existing steel drums at the expense of the importer has also been suggested. All consignments for one importer should be stored in a manner that enables him to remove his cargo with the minimum delay. Mixing of lots between ships' holds has presented many difficulties.

Drums sold to East Pakistan have been uniformly marked with a 48-pound "tare" weight. Importers have frequently claimed that, whereas 48-pound tare is normal for such drums of 18 gage, the actual gage of some inspected drums has been 16, with nominal tare varying between 48 and 52 pounds. Cases of inspected drums with a 60-pound tare have been reported.[6]

At Chalna anchorage, which serves the heart of the Province's jute industry at Khulna, there are no permanent port facilities, and ships docking there are serviced exclusively by river craft. Rail facilities, broad and narrow gage, are available for movement of cargo at Khulna, although river transport is most commonly used to interior ports.

While no U.S. vegetable oil has been destined for the Chalna anchorage, the potential of servicing importers in the western portion of the Province through this port appears excellent. The anchorage is located 80 miles up the Pressur River from the Gulf of Bengal, and provides economical servicing of the entire Brahmaputra Basin area, including an area of about 20 million people and Khulna, Barisal, Rajshahi, Bogra, and Parvatipur. The anchorage is only slightly shallower than Chittagong, providing a minimum depth of 20 feet year-round, and 26 feet during the high water monsoon season from July through September. Better known lines currently pro-

[6] It should be noted that steam-cleaning facilities for drums do not exist in East Pakistan; drums being weighed for inspection are chemically or water cleaned or both, the amount of the residue remaining is nominal, however—generally less than 0.5 pound.

viding U.S./Chalna service include American Export Lines, Clan Line (British), City Line (British), Central Gulf Lines (Norwegian). Responsible forwarding agents and enclosed 1,000-ton motor barges are available at Khulna.

Railway. Two distinct unconnected railway systems service East Pakistan as the East Bengal Railway system. One is on the western side of the Province, serving the Chittagong area, and the other on the east, running from the north and terminating at the port of Khulna. About two-thirds of the system's 1,713 miles is meter gage; the remainder is broad gage. Transfer of cargo from the meter to broad-gage track is time consuming, costly ($12 per ton, Chittagong to Khulna), and impractical. A short narrow-gage track terminates at Khulna.

Roads. Roads in East Pakistan play only a minor role in the transportation system. Because of the vast river network and the absence of bridges at many points, most of the towns and villages have no connection by road. Most of the village roads are unsuitable for motor traffic; during the June-September monsoon months, they are usually flooded.

Air Routes and Airports. Both Dacca and Chittagong have major airports and are served by several international airlines. Pakistan International Airlines serves most of the principal cities of the area, including flights between East and West Pakistan. Indian Airlines Corporation and Burmese Airlines provide additional service to East Pakistan.

West Pakistan

The Market and the Market Place

West Pakistan has an area of about 310,263 square miles -- larger than the State of Texas -- with a wide range in topography, including the snowcapped Himalayan peaks, the desert of the Sind Province, and the alluvial plains of the Punjab, through which five tributaries of the Indus River flow. The level Punjab contains the largest irrigated area in the country.

The Punjab is the most important region in marketing, even though a substantial portion is conducted by a barter system, with money playing a relatively minor role in the economy.

Over 82 percent of West Pakistan's 40 million people live in rural areas, and about 97 percent are Moslems; most of the rest are Hindus, and there are a few Christians.

The people are well distributed throughout this vast area, with some concentration in Karachi, Lahore, and Multan. The degree of urbanization by Province varies considerably from a high of about 95 percent for the Federal Territory of Karachi to a low of less than 10 percent for Kalat, Peshawar, and Dera Ismail Khan.

The average per capita income in West Pakistan has been estimated at about $60 annually. The extremely low personal income of the nonurban population heavily weights the average per capita income for the country.

The importance of West Pakistan as a market is evidenced further in the fact that 75 percent of the total assessable income for all of Pakistan originates in the West. The current Second Five Year Plan which began in April of 1960 calls for a near 10 percent increase in per capita income. If achieved and distributed as in the previous plan when West Pakistan income increased well above the national average, will have a significant impact upon the purchasing power of the area. Based on a similar level of income in other countries, West Pakistan could support a per capita level of fat consumption of 15 pounds, or about 40 percent above its current level, estimated at about 11.0 pounds. This determination is contingent upon no relatively unfavorable movement in the supply and distribution of fats and oils, and a continued reduction in the price of edible fats to the consumer.

As mustardseed oil is "king" in East Pakistan, cottonseed oil is the factor in marketing in West Pakistan. The volume of animal ghee and butter consumption is difficult to estimate, but probably approximates 90,000 to 100,000 tons. The West Pakistan consumer enjoys a far wider variety of edible fats than his East Pakistani counterpart.

The vanaspati industry consumes almost the entire quantity of domestically produced and imported cottonseed oils. This oil, which constitutes upward of 75 percent of the raw fats used in vanaspati manufacture, is provided by local mills or imported under U.S. Government programming. When processed into vanaspati, it is blended with less costly hardened soybean oil, thus "stretching" limited local hydrogeneration capacity. The vanaspati industry also fully refines rapeseed and cottonseed oil for salad or cooking use. One vegetable oil refiner markets a fully refined soybean cooking oil. Small amounts of cottonseed oil foots are consumed in household laundry soap manufacture, generally of a poorer quality.

Animal ghee, primarily a buffalo product although some is made from cow's milk, is the premium fat of West Pakistan. Paradoxically, however, pure animal ghee is hardly available and, when it is, it sells for over $1.00 per pound. Ghee is produced in small rural villages and consumed in or near the areas of production. It is in these areas that grained vegetable ghee enjoys a particularly strong demand for use as an adulterant with natural ghee. This adulterated product is sold as "pure animal ghee" but at a marked discount.

Liquid vegetable cooking oils find a strong market in the Karachi area, particularly among refugees from the Bombay portion of India. In addition, large quantities of domestic rapeseed oil are fully refined in West Pakistan for export to East Pakistan. Liquid soybean oil imported from the United States has been sold in small quantities in West Pakistan.

The vanaspati- and liquid-oil-selling organization in West Pakistan is a sophisticated, highly developed undertaking, carried out through regional sales representatives. While the wholesale price is frequently established by the factory, many agents are authorized to let competition establish the actual selling price. This trend has resulted in keen price and quality competition, a downward trend in finished oil product prices, and an expanding market. As production of vanaspati and liquid oils increases, quality consciousness will increase and the retail price will continue to move further away from the established government maximum prices. To date, wholesale prices have been more responsive to price competition than retail prices, and show a marked price weakness.

Vanaspati and Vegetable Oils Industry

It is estimated that in West Pakistan 93 commercial vegetable oil and soap plants and 11 vanaspati plants were operational by mid-1961. In 1960, West Pakistan production of major categories of the industry was estimated as follows:

	1,000 m. tons
Cottonseed oil	55 - 60
Rapeseed oil	25 - 30
Vanaspati	31
Soap	26

Employment data are not readily available, but average annual factory employment of the edible oil and vanaspati enterprises is estimated at over 4,000.

Animal ghee and butter production, a rural cottage industry, centered in the Lyallpur-Lahore area, is estimated to approximate slightly over 100,000 metric tons. Karachi is the major center of vanaspati and soap manufacture in West Pakistan; other important areas include Lyallpur, Lahore, Hyderabad, and Rahimyar Khan -- areas where vanaspati is blended with animal ghee.

TABLE 8.--West Pakistan: Vanaspati (vegetable ghee) industry, estimated capacity, 1961-63

Company	Capacity on January 1[1]		
	1961	1962	1963
	1,000 m.t.	1,000 m.t.	1,000 m.t.
Burma Oil Mills	3.0	9.0	9.0
Crescent Industries	4.5	4.5	4.5
Ganesh Flour Mills	7.5	7.5	7.5
Lever Brothers	9.0	9.0	9.0
Maqbool	3.0	6.0	6.0
Punjab Vegetable Ghee	3.0	6.0	6.0
Sargroh Vegetable	3.0	3.0	4.5
Wazir Ali	3.0	6.0	6.0
E. M. Oil Mills	-	9.0	9.0
Hydari Industries	-	6.0	9.0
Bengal	-	4.5	4.5
Al Hilal	-	-	3.0
Shaikh Fazlur Rahman & Co.	-	-	6.0
Assn. Industries	-	-	6.0
Saigol Bros.	-	-	18.0
A. & B. Biscuits Factory	-	-	3.0
Karachi Oil & Seed Industry	-	-	3.0
Lions Vegetable Ghee	-	-	3.0
Shams Vegetable Ghee	-	-	3.0
W. P. Thal	-	-	3.0
License approval pending (3 plants)	-	-	9.0
Total	36.0	70.5	132.0

[1]Based on 300 operational days per year.

The rapid development of the vanaspati industry, the Province's most important consumer of imported and domestically produced vegetable oils, personifies the growth in the industrial sector of the country's economy. On the basis of rated capacity of equipment,[7] the industry's capacity on January 1, 1961, equaled about 36,000 metric tons. Since some of this capacity was not operational in 1960, output for that year amounted to only about 31,000 tons.[8] By January 1962, it is estimated that the industry will have a rated, installed capacity of 70,500 tons, and by January 1963 approximately 132,000 tons if all license holders procure and install equipment according to current intentions. While much of the current expansion is new facilities, established plants are rapidly adding to existing capacity.

It is interesting to note from table 8 that average installed capacity of the 8 operational plants in 1960 was only 4,500 tons per unit; by 1962 this figure will reach about 6,400 metric tons. Because of the large number of new small plants scheduled to commence vanaspati operation in 1963, the average installed capacity is expected to decline slightly, to about 6,200 tons per plant. Based on the experience of older established plants, 6,000 is the minimum operational unit to maximize profits. Given the validity of this factor, the 6 plants of 3,000-ton capacity scheduled for installation in 1963 may be expected to increase their capacity to the more efficient level of operation of 6,000 tons by 1965, providing a combined industry capacity in that year of about 150,000 tons of vanaspati.[9]

Much of the equipment currently being installed in the vanaspati industry is efficient, modern, and of Western origin.[10] With the dynamic growth of this industry, equipment-buying missions are constantly contacting producers of heavy units, particularly converters, neutralizers, deodorizers, generators, and, in recent months, solvent extraction equipment. The government's liberal stand on the expansion of industry in Pakistan, particularly food industry, enables the vanaspati industry to shop for equipment in any part of the world. (More complete details on equipment are available in the Appendix.)

In addition to manufacturing vanaspati, the industry group produces cottonseed and rapeseed oil for retail or export to East Pakistan for food uses, soap, bakers margarine, and byproduct oilcake. Of a total of 96,000 metric tons of cottonseed oil available in West Pakistan in 1960/61, an estimated 43,000 tons was fully refined and deodorized for sale as a liquid cooking oil; 37,000 tons was consumed in vanaspati manufacture; 5,000 tons was utilized in soap manufacture; the 11,000 tons remaining was being added to stocks. Rapeseed oil is not consumed in vanaspati manufacture or industrially but is consumed as a cooking oil. West Pakistan production of edible rapeseed oil is estimated at about 25,000 tons, of which 5,000 to 10,000 tons is shipped to East Pakistan.

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[7] Based on 300 days per year, three batches.

[8] Total output in both Provinces reportedly was: 1958, 20,400; 1959, 27,100; 1960, 34,300 tons.

[9] Statistics frequently underestimated rated capacity since no consideration was made of plant expansion from equipment produced in the plants' own machine shops, unregistered equipment installed prior to 1954, etc.

[10] Sargroh vegetable ghee plant, Lyallpur, has domestically produced units.

Soap production in West Pakistan is estimated at about 26,000 metric tons, including 20,500 tons of laundry soap (18,500 unwrapped bars, 500 wrapped bars) and 2,500 tons of toilet soap. Tallow is the primary soap fat; liquid coconut oil, most of it from Ceylon, and lesser quantities of cottonseed oil foots provide the remainder. High lauric acid coconut oil is favored for use in toilet soaps, shaving sticks. hair preparations, etc., the consumption of which continues to rise annually.

Prices and Price Patterns

Wholesale prices of cottonseed oil in Karachi during 1960 showed the characteristic seasonal pattern. As the supply of cottonseed to millers increases following the fall harvest, prices weaken, reaching a seasonal low in October and November, and then begin to slowly recover. By April 1961, the price of cottonseed reached 19.4 cents per pound, a level 10 percent below that of the similar period in 1960. The domestic price of cottonseed oil has shown a weakening trend since reaching a peak of nearly 30 cents a pound in 1958-59.

As in any expanding economy, many factors in Pakistan are exerting pressure on internal prices. Domestic cottonseed production has remained fairly static in the face of a rapidly increasing demand for edible oils for consumption and vanaspati manufacture. In recent years, the Government of Pakistan has increased purchases of U.S. cottonseed and soybean oil under U.S. Government programming to help stabilize domestic prices, which have far exceeded world prices, and to meet the increasing requirements of the industry.

As U.S. cottonseed/soybean oil became available to the vanaspati industry, the price rise was arrested, and the industry reconsidered its long-term position. The vast expansion program currently underway in the vanaspati industry reflects

TABLE 9.--West Pakistan: Monthly average wholesale prices of edible vegetable oils, Karachi, 1960

Month	Cottonseed oil (Semirefined)	Mustard oil
	Cents per pound	Cents per pound
January	20.64	21.31
February	21.24	21.60
March	21.23	21.66
April	21.48	20.88
May	20.93	20.16
June	21.10	19.43
July	21.77	19.83
August	20.29	19.23
September	18.44	18.79
October	17.35	20.16
November	17.10	20.54
December	18.11	21.18

Central Statistical Office, Government of Pakistan.

the belief that U.S. cottonseed/soybean oil will continue to be made available to West Pakistan industry. The downward price trend in cottonseed oil is welcomed by the vanaspati industry, which is also the major producer of liquid oil, as necessary in opening new markets and to satisfy the requirements of the low-income population.

The local cottonseed crushers, already hard pressed by limited supplies of cottonseed, are caught in a price squeeze. Required to operate their dated equipment, bidding against the uninformed farmer who desires to feed whole cottonseed to his livestock, the rural millers must pay a premium for their cottonseed. After absorbing this high cost for seed and operating on high-cost equipment, they are hard pressed to sell their oil competitively and under government-imposed ceiling prices. Local cottonseed crushers' capacity remains idle a large part of the year.

In an effort to help solve these problems, the Government of Pakistan is educating farmers on the value of low-oil high-protein protein cottonseed cake. Soon, mills are expected to be required to decorticate their seed; and, in time, a larger portion of the currently unprocessed cottonseed is expected to be made available to local millers.

Government price ceilings, wholesale and retail, on vegetable ghee throughout Pakistan are as follows:

Quantity (lbs. in tins)	Ex-factory[1]	Wholesale[2]	Retail[3]
	Cents per lb.	Cents per lb.	Cents per lb.
35	31.0	31.7	32.5
10	32.5	33.1	34.2
5	32.9	33.8	35.0
2	33.6	34.0	36.1

[1]Maximum price chargeable by vegetable oil factories to wholesalers for vanaspati delivered at the wholesaler's warehouse.

[2]Maximum wholesale price to retailers at retailer shops.

[3]Maximum retail price. For vanaspati supplied to the Defense Services, maximum is $10.60 per 35 lbs., f.o.m. (free on rail) or about 30 cents per pound.

Vanaspati continues to sell below the maximum price ceilings, with the popularity of the brand playing an important role in establishing the final price. While the price of vanaspati has declined in recent years, the government currently maintains a 12 percent sales tax and a 1.5-cent-per-pound excise tax levied at factory. These taxes combine to increase the retail price to the relatively low-income-earning consumer by over 15 percent and to act as a restriction on broadening the market at a price level where the demand is highly elastic.

As in the cast of vanaspati, liquid vegetable oil prices are controlled at ex-mill and retail. Control prices for certain select oils are as follows:

	Maximum[1]	
	Ex-Mill Cents per lb.	Retail Cents per lb.
Rapeseed and mustard seed oil	20	23
Cottonseed oil, Karachi	19	23
Cottonseed oil, Province	18	23

[1] All prices are excluding the sales tax.

Transportation

Ports and Port Handling Facilities. Karachi is the major part of West Pakistan, and also of land-locked Afghanistan about 300 miles to the north. It is undergoing an extensive expansion program, which originated some years ago. Expansion in port capacity is being provided from reconstruction of old berths and improved warehousing and transit facilities. Many of the rebuilt berths have already been put into service, along with modern cranes for loading and discharging cargo. Work on rebuilding the dockside facilities is still underway.

The main shipping berths are located on the east and west sides of the channel in the upper harbor. On the east side, there is a continuous line of 17 berths, which have a draft of 26 feet to 29 feet alongside. Thirteen of these berths have been reconstructed for a sanctioned depth of 34 feet.

The west side berths, called West Wharf, are 4 in number: 3 of them are 575 feet long with a draft of 32 feet alongside and the fourth one is 600 feet long with a draft of 34 feet alongside. In addition, there are 2 lighterage berths, one of them 520 feet long with a draft of 10 feet and the other 325 feet long with a draft of 6 feet.

Alongside the boat basin, there are 2 petroleum berths. The old berth is 403 feet long but is capable of berthing tankers of 550 feet with a draft of 31 feet. The newly constructed second berth is 644 feet long with a draft of 31 feet. Bunkering and discharging pipes have been laid on these piers and given direct connections to the bulk oil installations located nearby.

The general method of discharging and loading at Karachi is by means of shore cranes provided by the Port Trust, but the ships frequently use their own facilities which generally exceed the capacity of the port's stationary cranes.

Vegetable oil shipments from the United States usually arrive in Karachi Port as part of a general cargo at an average freight cost of about $34.00 a ton. The unloading of drums is efficiently carried out by the 2- and 3-ton-capacity shore cranes, moving the drums directly to waiting freight cars or to open storage on the pier. When transfer is made to freight cars, the drums are transferred under supervision of the Port Authority to an open customs area for sorting by consignees. Injury to drums is not usually incurred until the drums are unloading at the customs area. Here the initial unloading from railway cars is frequently improperly handled, resulting in injury to the drum seam. While planks are available for rolling drums from railway cars to the ground, much improper handling continues.

The Port of Karachi is in need of its present expansion program. Ships frequently wait outside the harbor for extended periods of time for berthing facilities. Railroad equipment for moving cargoes north is in short supply, and usually not available without a prolonged wait. Many importers have been providing trucks for moving their consignments of drums to their facilities. Proper, clear identification of drums is most important, for shipment to be speedily handled in the Karachi Port Trust area. In one recent shipment, at least 300 U.S. vegetable oil drums failed to be cleared by customs due to unintelligible markings.

Railways. West Pakistan is served by the North Western Railway, the largest single system in the Indo-Pakistan subcontinent. It has a route length of 5,334 miles, of which 4,635 are broad gage, 381 are narrow gage, and 318 are meter gage. The main portion of the railway -- all broad gage -- links Karachi with the Punjab and the North West Frontier Province.

Roads. West Pakistan has a fairly satisfactory road and highway network running from Karachi north through Sind, Bahawalpur, the Punjab, and up to the North West Frontier Province. However, in the west, roads have not been developed to any extent. The total road length of West Pakistan consists of 8,630 miles of all-weather roads and 33,633 miles of fair-weather roads or trails.

Air Routes and Airports. Most of the principal cities in this marketing area can be reached by air. In addition to internal service (including flights between West and East Pakistan) and regional service, the Government-operated Pakistan International Airlines (PIA) has a weekly service between Karachi and London via Cairo. The airport at Karachi, recently expanded can accommodate jet aircraft, is one of the busiest in the East, and is used by leading international airlines.

Role of the Pakistani Government

Government Organization

Pakistan's Government is organized along the lines of a presidential system with an 11-man cabinet headed by President Mohammed Ayub Khan. The cabinet includes 3 former senior army officers and 10 civilians, 5 from each part of the country.

The government says it plans to restore representative, constitutional government in Pakistan. In accordance with this "Basic Democracies Plan," 80,000 representatives were elected to village and town councils in nationwide elections.

Financial Position of the Government

An accurate assessment of the financial position of the Pakistani Government is difficult to make. The country has in recent years had a substantial trade deficit. It has also been running on an internal deficit in recent years (1.28 billion rupees in 1959) but, with economic assistance from Western countries and international lending agencies, there has been major industrial and minor agricultural achievements in recent years. Also the new government has made considerable progress in combatting inflation and in bringing the budget and credit situation under control.

The rate of industrial production has increased faster than the cost of living. This has helped check the inflationary tendencies incident to deficit financing. Pakistani gold and foreign exchange holdings increased in 1960 to a total of $415 million and indications are that this upward trend will continue in 1961. Increases in the price of jute, Pakistan's principal export commodity, have contributed materially to the country's gold and foreign exchange position.

Many factors have deterred economic progress. The country has a large defense budget. Mineral wealth, investment capital, and other resources, such as highly trained technicians, are in particularly short supply. Hard-currency-earning exports are, to some degree, tied up in bilateral agreements with Communist Bloc countries. However, in spite of these and other difficulties, the goals of the Second Five-Year Plan -- a 20-percent increase in national income and a 10-percent increase in per capita income -- appear attainable and, as foreign aid continues to become available, economic development will increase markedly.

Foreign Capital Investment[11]

Investments in Pakistan by nonresidents must be government-approved. In order to encourage industrial development, the government follows a liberal policy toward foreign investors. They can start any industry in the private sector without restriction on their use of local capital. However, some foreign firms previously established in Pakistan have met with difficulties recently.

There are some restrictions on the use and repatriation of foreign capital: (1) foreign capital invested in approved industries established after September 1, 1954, may be repatriated to the extent of the original investment at any time and current profits may be transferred without restriction; (2) profits that are reinvested in approved industrial projects with the approval of the government may be treated as investment for the purpose of subsequent repatriation; (3) appreciation of any capital investment under (1) and (2) may also be treated as investment for the purpose of subsequent repatriation. These repatriation facilities will be subject to the exchange control regulations in force at the time, and they will not apply to the purchase of shares on the stock exchange (unless the purchase is an integral part of an approved investment project) or to capital invested before September 1, 1954.

Guarantees provided under the U.S. Investment Guaranty Program insure just and fair compensation in the currency of the country of origin of the capital in the event of nationalization of any project. (The subject of issuing a foreign investment law in Pakistan is under active consideration.)

Transfers of capital abroad by residents are generally not permitted. Detailed rules govern the transfer of capital by persons emigrating or retiring from Pakistan, depending upon the nationality of the person concerned and the country or monetary area to which the transfer is to be made. Foreign nationals resident in Pakistan are permitted to transfer capital assets up to the equivalent of U.K. £5,000. Residents are permitted to sell foreign securities upon approval by the State Bank, provided

[11] Information supplied by World Trade Information Service, U.S. Department of Commerce.

the foreign exchange proceeds resulting from such sales are surrendered, but there is no provision for purchases of foreign securities by residents. In this connection, foreigners residing in Pakistan are considered nonresidents.

Securities transactions involving nonresident interests are also subject to government approval. Proceeds accruing from the liquidation of nonresident capital assets may be credited to blocked accounts. Balances on blocked accounts may be invested in approved securities payable in Pakistani rupees.

Tariff Duties

Pakistan liberalized the import of various commodities in 1960 and provided further liberalization in mid-1961. On June 30, 1961, the government removed the import taxes on edible oils. Current ad valorem duties include (in percent): Coconut oil 25; oilcake, meal, and flour (non-defatted) excluding mustard 50; Tallow, free; margarine and other prepared fats 50; butter, India free, GATT 25, other 30; soybeans and peanuts, India free, British Colonies 10, other 20; animal fats and vegetable oils, hydrogenated but not further prepared 50.

Imports and Import Payments[12]

All imports must be licensed, except those made by the Central Government for defense purposes, goods for which orders are placed directly by departments of the Central Government, goods in transit, personal baggage, and certain other items permitted under a Ministry of Commerce Notification (No. 335/260/24 of June 12, 1951). An import license may be used in any country of the world, except for items for which single country licenses are issued under the terms of trade agreements. Import licenses are issued only on a c. and f. basis and generally for commodities specified in the half-yearly import policy announcements. In addition, import licenses are issued for specified items under the Export Bonus Scheme.

Where a valid import license is held, the required exchange is released by an authorized bank upon receipt of the related import documents. The licensee may make payment by opening a letter of credit or by remitting against a sight draft. Advance remittances before shipping documents are received are not normally permitted, but in special cases such as imports of machinery and other capital goods, the State Bank may authorize advance payment for a part of the value of the goods.

Import Procedures

The Controller of Imports and Exports, through deputies in Karachi and Chittagong, establishes the procedure for a Pakistani importer to arrange licensing for purchasing U.S. vegetable oil under Public Law 480 agreements.

As soon as the basis of licensing is announced, the bank, at the request of one of its clients, will complete relevant entries on the license forms showing the item

[12] Information supplied by World Trade Information Service, U.S. Department of Commerce.

number, I.T.C. classification, category of the importer, registration number of the importer and his share -- worked out according to the basis of licensing announced for the shipping period. The amount of the share thus calculated will be rounded off by the bank to the nearest hundred.

The importer or his representative then signs the form and the bank verifies the signature and the entries and affixes a seal. The completed license forms are then sent by the bank to the licensing office along with the importer's Pass Book showing the original entitlement.

Completed license forms accompanied by pass books are accepted by the licensing office at the receipt counter during fixed hours in the morning. After receipt, the licensing office verifies the entries with reference to the relevant ledger for each importer and authorize the import by signing the import license and affixing the Security Seal of the Controller of Imports and Exports.

A representative of the State Bank is housed in the licensing office and, as soon as necessary verification has been completed by the licensing office and import has been authorized, the form is transferred to him for registration. The State Bank places the registration number and date of registration on the form and affixes its seal.

The form, now duly authorized and registered, and still accompanied by the pass book, goes to the delivery counter of the licensing office. From there it is handed over to an authorized agent of the Bank during fixed hours in the afternoon of the day on which the license application was presented. The Exchange Control copy of the license (against which remittance is finally effected) remains with the bank and the customs copy is given to the importer to enable him to clear the goods. The importer is then in a position to establish a letter of credit with his bank immediately after his license has been received by the bank from the licensing office.

In practice, after having received public notification that a P.L. 480 agreement has been signed, all licensed parties submit their applications, in terms of money and amounts to the CCI&E. The CCI&E establishes the import quota of vegetable oil for each importer by return circular letter.[13] The circular letter is taken by the importer to his own credit authority, which prepares a license on behalf of the importer and re-submits the license to the CCI&E. The CCI&E examines the form and approves it, returning it to the importer's bank or credit authority. The bank notifies the importer when the approved license has been returned.

At this stage, with approved license in hand, the importer is ready to negotiate for direct purchases of vegetable oil from U.S. suppliers. His first step is to request prices of U.S. oils from sellers' agents and domestic channels (indentors). The government's Price Check Department supplies price data. When buyer and seller agree on a price the bid is submitted for approval to a price check authority, along with a copy of the importer's license and other documents. If the bid price does not

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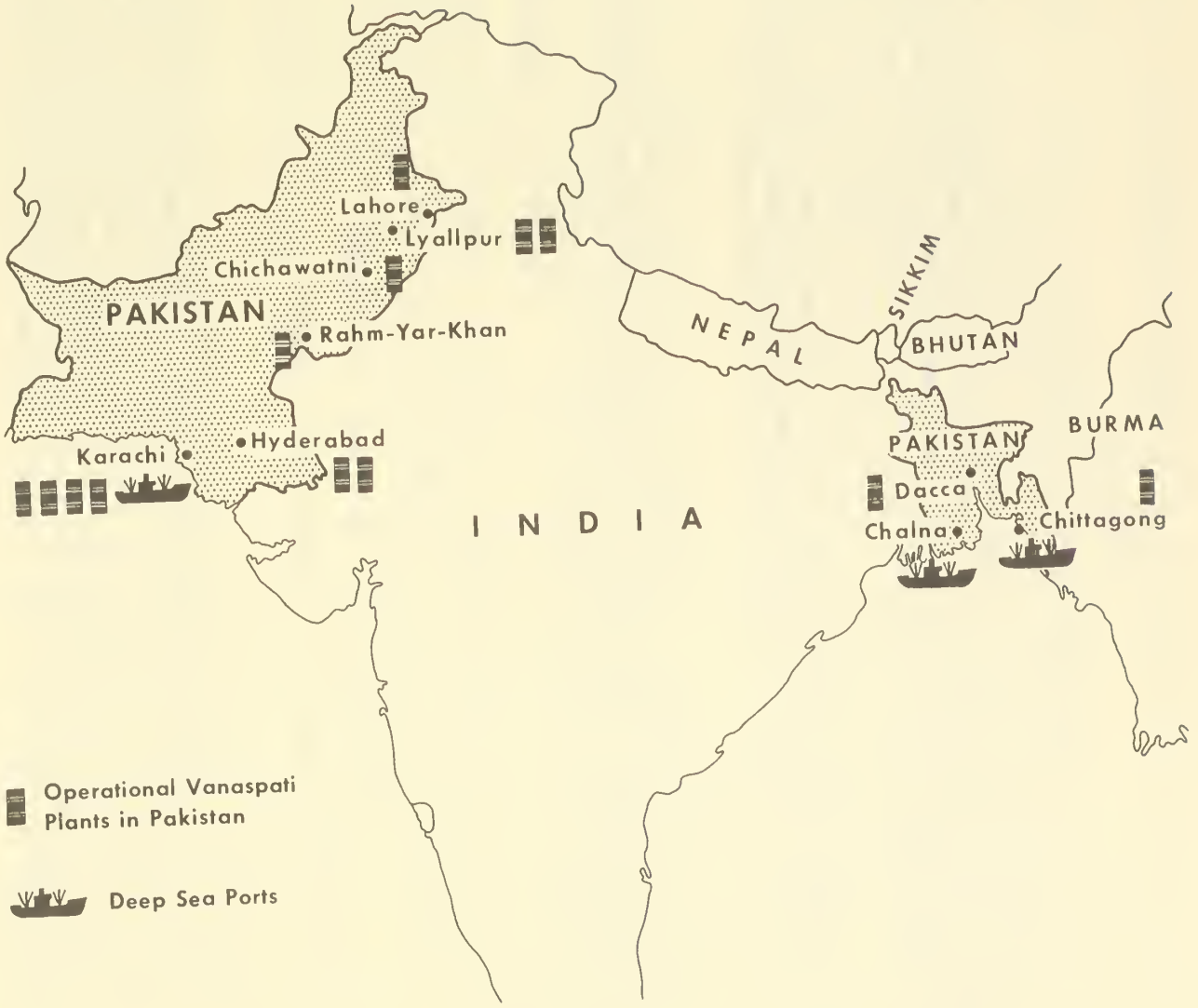
[13] In current experience, the cumulative amounts requested by importers have far exceeded the amount of oil available for distribution. Thus, each importer may receive up to 40 or 50 percent of his initial request.

exceed the price check authority maximum it is approved and the importer's bank may issue a letter of credit on the basis of the final approved documents.

The banking or credit authorities are free to determine the margins they are going to require of their clients. The actual margin frequently varies between 5 and 40 percent of the c. and f. value, but averages near 15 to 20 percent. Larger companies and well-established importers have little difficulty accepting a 5- or 10-percent margin but many small importers are hard-pressed to provide margin or up to 40 percent and find the margin requirements often limit imports. Money is frequently tied up for 90 to 180 days awaiting delivery and clearance of cargo.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BHUTAN
PAKISTAN
BURMA
Dacca
Chalna
Chittagong
Operational Vanaspati Plants in Pakistan
Deep Sea Ports

APPENDIX

Instructions for Making Animal Ghee

Ghee Made From Cream. -- Use cream of a quality that will make a butter scoring not less than Grade B or 90. Pasteurize (no color added), culture to 0.9% acid with good lactic starter. Churn; place unwashed butter in a steam jacketed kettle. Heat slowly until melted and boil with constant stirring until moisture is driven off. For low-heat ghee, heat to 221 deg. F. never higher than 230 deg. F. (closer to 221 deg. F.) in 6 to 8 minutes, at which time scum should break and show clear ghee. For high-heat ghee, heat to 239 deg. F., never higher than 248 deg. F. (closer to 248 deg. F.) in 8 to 10 minutes. Remove from heat; allow to settle for 15 to 20 minutes. Filter clear ghee through single-service filter. If not clear, refilter or clarify.

Ghee Made From Butter. -- Use butter scoring not less than Grade B or 90. Melt in steam jacketed kettle, add 0.5% to 1.0% good lactic starter or 20% freshly churned unwashed butter, cook as above.

In both methods, cool ghee slowly after canning. Grain usually develops within 24 hours.

* * * * *

Instructions for the Production of Vanaspati

A manufacturing process of vanaspati, or vegetable ghee, in Pakistan is as follows.

Cottonseed oil is passed through prevacuum bleaching and neutralizing vessels in which the crude cottonseed oil is treated with alkali, usually caustic soda solution, under conditions arranged to combine maximum color-removal with optimum separation of neutral oil and soap. The bleaching agent is then added to the neutralized oil and the oil is stirred vigorously so that maximum contact between oil and bleaching agent is achieved. When the bleaching is completed, the oil and the bleaching earth is passed through a filter press to produce a clear earth free neutral oil, light in color.

The prerefined oil then passes into an autoclave and is stirred under the atmosphere of hydrogen in the presence of a catalyst to promote the reaction under certain temperature and pressure. When the oil has attained the desired consistency it is filtered through a filter press to ensure that the nickel catalyst traces are removed. If the first filtering does not assure the removal of the traces, the process is repeated.

The catalyst frequently used is nickel metal produced from the reduction of nickel formate in a separate catalyst preparation unit. Hydrogen gas or hardened soybean oil is then mixed with the oil to achieve a hardening of the soft liquid cotton-

seed oil.[1] The hydrogen is frequently produced by electrolytic decomposition of a weak caustic soda solution in specially improvised cells.

Hard oil from the hydrogenation unit is brought into a postrefining vacuum bleaching vessel which is similar to a prerefining unit. Here the hard oil is treated exactly as in the prerefining units. This treatment removes any undesirable acidity and color produced during the hydrogenation. This process also washes away residual chemicals brought in by the hard oil during the previous processes. The post-refined hard oil is pumped through filter presses as frequently as may be necessary to remove all chemical trace elements. The filtered oil is then conducted to a storage tank.

Fully refined hardened oil is then charged into a large deodorizing vessel and subjected to steam-distillation under high vacuum. The steam is passed through the oil at temperatures varying between 170 - 200°C.

This treatment produces a fully deodorized product of a tasteless variety.

Deodorized oil is passed through a polishing press - filter press - from which the fully refined deodorized oil is placed in a storage tank. This filtered oil is then pumped into a blending vessel where Vitamins A and D are added under controlled temperatures.

The finished product - Vanaspati, or vegetable ghee as it is commonly called - is then forced under gravity into filling tanks which generally feed automatic or semi-automatic equipment for packing into 2, 5, 10, and 35-lb. tin containers.

[1] Hydrogenated U.S. soybean oil is popularly used.

East Pakistan: Vegetable Oil Mills by Category

Name and address	Type of oil produced[1]	Employment category[1]
Group 1 (Annual production of vegetable oil exceeds 5,000 metric tons):		
1. M. Habib Oil Mills Ltd. Postogola, Faridabad, Dacca.	M-S-L-P	1
2. Prosona Oil Mills, Sadar Ghat, Chittagong.	M-S-L	1
Group 2 (annual production of vegetable oil exceeds 1,000 tons but is less than 5,000 metric tons):		
1. Bengal Assam Rice and Oil Mills, Strand Road, Chittagong.	M	3
2. Crescent Oil Mills, 46, Imamganj, Dacca.	M-P-S-L	3
3. Dulichand Omraolal Oil Mills, Imamganj, Dacca.	M-S-L	3
4. Hamedia Oil Mills	M-L-S-P	1
5. Industrial Oil Mills, Dacca.		
6. M. M. Oil Mills & Indus., P.O. Faridabad, Dacca-4.	M-S-L-K P-N-C-Cc	2
7. Mohammadia Oil Mills Sholashahar, Chittagong.	M	3
8. Pakistan Oil Mills, Devi Das Lane, Chawk, Dacca.	M	4

[1]See key at end of table.

Name and address	Type of oil produced	Employment category
Group 2 -- Cont.:		
9. Sree Gopal Oil Mills, Noakhali.	M	4
10. Luxmi Oil and Rice Mills, Domar, Rajshahi.	M	4
11. Sultania Oil Mills and Soap Factory, 89 Asadganj, Chittagong.	M	1
Group 3 (annual production of vegetable oil exceeds 500 tons but is less than 1,000 metric tons):		
1. Banga Luxmi Oil Mills, Panchbibi, Bogra.	M	3
2. Bengal Oil and Rice Mills, Jhowtala Road, Bogra.	M	4
3. Dacca Oil Mills Ltd., 22, Imamganj, Dacca.	M	4
4. G. N. Oil Mills, Mirkadim, Decca.	M	4
5. Ganesh Oil Mills, P.O. Gaibondha, Rangpur.	M	4
6. Naujawan Oil Mills, New Chaktai, Chittagong.	M	4
7. Nur Oil Mills, Narayanganj, Dacca.	M	4
8. Sree Mahabir Rice, Oil and Dal Mills, Hiral, Dinajpur	M	2

Name and address	Type of oil produced	Employment category
Group 4 (annual production of vegetable oil is less than 500 tons):		
1. Adamjee Abdul Karim Oil Mills, P.O. Chawk Bazar, Dinajpur.	M	4
2. Adamjee Oil Mills, Amjad Ali Road, Sylhet.	M	4
3. Ahmadi Oil Mills, Chittagong.	M	4
4. Allan Oil, Rice and Flour Mills, 295 Bansghatta, Khatunganj, Chittagong.	M	4
5. Bablu Oil Mills, Thana Road, Bogra.	M	4
6. Danga Azad Mills, P.O. Ghoramara, Rajshahi.	M	4
7. Bengal Oil Mills, Sylhet.	M	4
8. Bismillah Oil Mills, Asadganj, Chittagong.	M	4
9. Champa Oil Mills, 92 Asadganj, Chittagong.	M	4
10. Coconut Products Co. Ltd., Khulna.	Co.	4
11. D.K. Power Co-operative Oil Mills, Khepupara, Barisal.	M	4
12. Farid Oil & Flour Mills Reasuddin Bazar, Chittagong.	M	4

Name and address	Type of oil produced	Employment category
Group 4 --Cont.:		
13. Golap Oil Mills, Madarbari, Chittagong.	M	4
14. Golapur Oil Mills, Golapur, Rajshahi.	M	4
15. Hasni Oil Mills, 79 Khatunganj, Madarbari, Chittagong.	M	4
16. Helal Oil Mills, Amjad Ali Road, Sylhet.	M	4
17. Helal Oil & Rice Mills, Amjad Ali Road, Dacca.	M	4
18. Hussain Oil Mills P.O. Alamnagar, Rangpur.	M	4
19. Ishurdi Vegetable Oil Mills, P.O. Ishurdi, Pabna.	M	4
20. Jamil Oil Mills, Baragola, Bogra.	M	4
21. Janoo Oil & Rice Mills, Amjad Ali Road, Sylhet.	M	4
22. Kasimuddin Rice & Oil Mills, Paba Shopura, Rajshahi.	M	4
23. Madina Oil Mills, Netaiganj, Narayanganj, Dacca.	M	4
24. Mecca Oil, Dal & Flour Mills, Narayanganj, Dacca.	M	4

Name and address	Type of oil produced	Employment category
Group 4 -- Cont.:		
25. Mohammadia Oil Mills Nalchiti, Barisal.	M	4
26. Muahmmadi Oil Mills, 3 Kachery Gully Road, Netaiganj.	M	4
27. Narayanganj Oil Mills, P.K. Mitra Road, Tanbazar, Narayanganj, Dacca.	M	4
28. National Oil Mills Ltd., 157 Distillery Road, Gandaria, Dacca.	M	4
29. Pak Oil Mills, 125 Kurbaniganj, Chittagong.	M	4
30. Parbatipur Oil Mils, Dinajpur.	M	4
31. Rajshahi Oil Mills P.O. Ghoramara, Rajshahi.	M	4
32. Ramna Oil Mills, Mirkadim, Dacca.	M	4
33. Rehmat Oil Mills, 337 Tezgaon Industrial Area, Dacca.	M	4
34. Saleh Oil & Rice Mills, Sylhet.	M	4
35. Sree Durga Rice, Dal, Flour & Oil Mills, P.O. Talora, Dist. Bogra.	M	4
36. Sree Hanuman Oil Mills, Ishurdi, Pabna.	M	4

Name and address	Type of oil produced	Employment category
Group 4 -- Cont.:		
37. Sree Mahabir Rice & Oil Mills Saidpur, Rangpur.	M	4
38. Swaika Oil Mills (Pak) Ltd., Faridabad, Dacca.	M	4
39. Sylhet Oil Mills, Sylhet.	M	4
40. Taj Oil Mills & Industries, Chawk Bazar, P.O. & Dist., Dinajpur.	M	4
41. United Industrial Corp., Korbaniganj, Chittagong.	M	4

Key:

M = mustard oil
P = peanut oil
L = linseed oil
S = sesame oil
K = kapokseed Oil
N = niger oil
C = castor oil
Cc = cottonseed oil
Co = coconut oil

Employment category:
1 = Employing over 100 persons
2 = Between 50 and 100
3 = Between 25 and 50
4 = Below 25

East Pakistan -- Licensed Vegetable Oil Importers

No.	Name and address	G. O. P. import category [1]
1.	A. R. Mohamad Siddik 86, Khatunganj, Chittagong	1
2.	A. S. Jusab Bros. & Co., 277-A, Khatunganj, Chittagong	3
3.	Abu Nasar & Co. Dacca	3
4.	Abdul Razzak Ltd. Sylhet/Chittagong	3
5.	Adam Ltd., 85, Khatunganj, Chittagong	1
6.	Alfa Trading Agency 22, B.K. Das Road, Farashganj, Dacca.	3
7.	Araq Ltd. Chittagong	1
8.	Ashraf & Ashraf, 282, Anderkilla, Chittagong	3
9.	Associated Mercantile 108, Pathantooly, Chittagong	3
10.	Aziz (E. Pak) Ltd. Chittagong	2
11.	Abdul Razak Abdul Kader 209, Khatunganj, Chittagong	3
12.	Abdul Sattar Bros (Nagaria) Ltd. 320, Khatunjganj, Chittagong.	3
13.	Abdul Majid & Co. Chittagong	3
14.	Abdul Aziz Ali Mohamed 599, Ramjoy Mohajan Lane Chittagong	3

[1] 1 = import category of over $50,000; 2 = $15,000 to $50,000; 3 = below $15,000.

No.	Name and address	G.O.P. import category
15.	Abdul Razak Abu Baker	3
16.	Abdul Razak Ahmed Chittagong	3
17.	Abro Trading 330 Khatunganj, Chittagong	3
18.	Alam Commercial Corp. 136, Ghatforhadbeg, Chittagong	3
19.	Aziz Corporation South Nalapara, Chittagong	3
20.	Anwara Trading Corporation Chittagong	3
21.	Baby Stores Noagoon	3
22.	Bubma More & Co. Noaganj	3
23.	Burma Oil Mills Chittagong	2
24.	Continental Trade Bureau Nandankanan, Chittagong	3
25.	Crescent Traders 67 Khatungunj, Chittagong	3
26.	Carrimjee Alibhoy & Sons 314B Khatunjunj, Chittagong	3
27.	Deccan Trading Co. 234 Terribazar Road, Chittagong	3
28.	Dacca Veg Oil and Allied Ind. Dacca	1
29.	Dada Ltd. Khatungunj, Chittagong	1
30.	Dawjee Dadabhoy & Co. 215 Strand Road, Chittagong	2

No.	Name and address	G.O.P. import category
31.	Dacca Yarn Trading Corp. Chandanpura, Chittagong.	2
32.	Dinan Trading Co. 214/219 Khatungunj, Chittagong	3
33.	Enamul Haque Chowdhury	3
34.	Esmail Abdul Sattar & Bros. 215 Khatunjgunj, Chittagong	1
35.	Ghor Ali Mandal & Others Khustia	3
36.	H. M. Saya & Co. 322 Khatungunj, Chittagong	2
37.	Hadi Khan & Co. 35/1 Madan Mohan Basak Road, Chittagong	3
38.	Hajee Suleman Goawalla Chittagong	3
39.	Haji Abdulla & Cons Chittagong	3
40.	Haji Esmail Haji Ahmed 165 Khatunganj, Chittagong	2
41.	Haji Ghaffar Haji Habib Janoo 214 Khatungunj, Chittagong	2
42.	Haji Hasham Haji Ahmed Chittagong	3
43.	Haji Nurali Sowadakar & Sons Chittagong	3
44.	Haji Osimeah & Bros. 200/201, Khatungunj, Chittagong	3
45.	Haji Sastar Haji Mohamed Kurbaniganj Holding No. 314B, Chittagong.	2
46.	Haji Traders Tippera.	3

No.	Name and address	G.O.P. import category
47.	Hashmatulla Mohd Sanaulah Rangpur.	3
48.	Hasni Vanaspati Chittagong	1
49.	Hoosen Bros. 363 Khatungunj, Chittagong.	1
50.	Hossain & Co. 82 Station Rd., Chittagong.	3
51.	H. A. Hussein Ramjoy Mohajan Lane, Khatungunj, Chittagong.	3
52.	Haji Abdulla Haji Gani 221 Khatunganj, Chittagong.	3
53.	Haji Aminul Haque & Co. Holding No. 195, Khatunganj, Chittagong.	3
54.	Hassan Brs. & Co. Dacca.	1
55.	Industrial Comml. Narayanganj.	3
56.	Ismail Haji Suleman 220 Khatunganj, Chittagong	3
57.	Issak H. Shakoor H. Jamal Chittagong	2
58.	Jahanara Begum & Co. Court Kushtia, Kushtia	3
59.	JanMohamed Haji Esmail 165 Khatunganj, Chittagong	3
60.	Jemmy Traders N.N. Pauls Qtrs. Block No.C-2, Feringhee Bazar Rd., Chittagong	3
61.	K. S. Ahmed & Co. Faridpur.	3

No.	Name and address	G.O.P. import category
62.	Mercantile Agencies 30 Tipoo Sultan Rd., Dacca	3
63.	Mohamed Haji Gani Korbaniganj, Chittagong	1
64.	Mohd. Ali Khan & Sons 268 Nawabpur Rd., Dacca	3
65.	Mohamed Usman Bros. 314/5 Korbaniganj, Chittagong	3
66.	Mohamed Ali & Co. Chittagong.	2
67.	Muzaffar Trading Co. Kurbaniganj, Chittagong	3
68.	Mohd Idris Abdul Razak Khulna.	3
69.	M. D. Roushan Brs. Dacca.	3
70.	Mohd Anwar Mohd Iqbal Brs. Chittagong.	3
71.	Mansukhrai Badrinarayan Narayanganj.	3
72.	Mohammadi Trading Co. 79 Khatunganj, Chittagong	2
73.	M. Moin & Co. 150 Nawabpur Rd., Dacca	3
74.	Moonlight Trading Co. Barisal	3
75.	Modern Trading Co. (Pak) Chittagong.	1
76.	Nasir Bros. Bogra.	3
77.	Noorsons Ltd. 83 Kurbaniganj, Chittagong.	1

No.	Name and address	G.O.P. import category
78.	National Oil Mills Noakhali.	3
79.	National Traders Paharpur, Dinajpur.	3
80.	N. S. & Company Bogra.	3
81.	Pakistan Selling Organization Sadarghat Road, Chittagong.	3
82.	Rahman & Sons Rajshahi.	3
83.	Rahmania Trading 221, Khatunganj, Chittagong.	2
84.	Ruby Trading Co. Dacca.	3
85.	Razak Ltd. 314/3, Kurbaniganj, Chittagong.	3
86.	S. T. R. Salaymohamed & Co. Chittagong.	3
87.	Sikdar & Co. Chittagong.	3
88.	Siddiqui Brothers Chittagong.	3
89.	Shakoor Ltd. Tiperra.	3
90.	S. Huque & Co., 23 Haranath Gosh Road, Lalbagh, Dacca.	3
91.	Sirajul Islam Mahmud Chittagong.	3
92.	Syed Firasat Husain Pabna.	3
93.	Sawalram Radhakisham 5 Sim Road, Narayanganj. Dacca.	3

No.	Name and address	G.O.P. import category
94.	Syed Ali Tarikullah	3
95.	Tabani Ariff Chittagong.	3
96.	Taj Oil Mills Chittagong.	3
97.	Tusta Sundari Basak Mymensingh	3
98.	Tar Mohamed Ltd. Chittagong.	2
99.	Yousuf Bros. 174 Khatunganj, Chittagong	2
100.	Yusuf & Co. 15 Khurbanigunj, Chittagong.	3
101.	Syed Afrnz Ali Sylhet.	3
102.	Haji Kashim Ali Mymensingh	3
103.	S. Amanal & Co. Chittagong	3
104.	Nirmal Chandra Saha Faridpur	3
105.	Ram Narayan Roy Comilla	3
106.	Azaq Ltd. Chittagong.	3
107.	S. Huques Co. Dacca.	3
108.	Abdul Mabul Sodagan Chittagong	3
109.	Harlem & Co. Chittagong	3
110.	Sahud Trade Emporium Dacca.	3

No.	Name and address	G.O.P. import category
111.	Master M. T. Ali Bros. Chittagong.	3
112.	Haji Md. Ismail & Sons Bander Bazar, Sylhet	3
113.	Pakistan United Traders Ltd. Chittagong.	3
114.	M. Rahman Co. Chittagong.	3
115.	M. D. Ronshan Bros. Dacca.	3
116.	Khan Islam Chittagong.	3
117.	Fazullah Ganjee Dacca	3
118.	Ganesh Bhander Khulna	3
119.	Chittagong Trading Company Chittagong.	3
120.	Haji Mohd. Ismail & Sons Sylhet.	3
121.	H. Jabil A. Khabel Mymensingh.	3
122.	Motilal Ghasilal Khulna.	3

Note: In West Pakistan, all vanaspati producers are licensed importers.

	Name of plant	Annual capacity
		Tons
1.	Pak. Oil Mills, Lyallpur	110
2.	S. Haji Mohammad Saeed & Co., Lyallpur	90
3.	Sultan Oil Mills, Lyallpur	170
4.	Pak. Cotton & Oil Mills, Sargodha	50
5.	Yacoob Oil Mills Shikarpur Road, Sukkur	180
6.	Dada Soap & Oil Mills, Sethaja, Khairpur	150
7.	Dirham Oil Mills, Shahdadpur	70
8.	M/s. Descent Oil Mills, Lyallpur	250
9.	M/s. Gahusia Silk & General Mills, Lyallpur	40
10.	M/s. International Flour & General Mills, Lyallpur	230
11.	M/s. Malik Oil Mills, Lyallpur	360
12.	M/s. M. Mohsin Maula Bux Oil Mills, Lyallpur	740
13.	Mohammadi Oil & General Mills, Lyallpur	150
14.	Rashid & Co., Lyallpur	130
15.	M/s. Guru Nanak Ice & Oil Factory, Lyallpur	100
16.	M/s. Sheikh Oil Mills, Sargodha	250
17.	M/s. Kisan Oil Mills, Sargodha	130
18.	M/s. Chenab Oil Mills, Sargodha	70
19.	M/s. Amin Ice Factory, Sargodha	190
20.	M/s. The Modern Ice Factory, Sargodha	---
21.	M/s. Pakistan Oil Mills, Multan	220
22.	M/s. The R.C.A. Ltd., Multan	700

Name of plant	Annual capacity
	Tons
23. M/s. Jullundher Ice Factory, Multan	60
24. M/s. Sheikh Oil Mills, Burewala, Multan	70
25. M/s. Doaba Oil Mills & Soap Factory, Burewala, Multan	140
26. M/s. Jahania Oil Mills, Multan	--
27. M/s. Sargodha Oil Mills, Multan	--
28. M/s. Zia Oil Mills, Okara, Montgomery	70
29. M/s. Pak. Oil Flour & Rice Mills, Montgomery	110
30. M/s. Pak. Ice Soap & Oil Mills, Jhang	--
31. M/s. Koh-i-Noor Oil Mills, Montgomery	--
32. Khunjao Oil Mills, Gujrat	60
33. The Aijaz Oil & Conduit Pipe Mills, Gujranwala	30
34. Munir Oil & Cotton Mills, Gujaranwala	50
35. Khawaja Brothers, Gujranwala	180
36. Sheikh Oil & General Mills, Rawalpindi	120
37. Kausar Oil & Rice Mills, Lahore	330
38. Koh-i-Noor Oil Flour Mills & Ginning Factory, Lahore	30
39. Brothers Soap (Oil) Factory, Lahore	10
40. Iqbal Cotton, Oil & Flour Mills, Lahore	20
41. Alamgir Industries, Lahore	--
42. Munawar Oil Mills, Kasur, Lahore	--
43. Engineers Ice (Oil) Factory, Kasur, Lahore	50
44. Sh. Abdul Majid Abdul Rashid Gora Cotton & Oil Factory, Kasur, Lahore	20
45. Mahboob Oil Mills, Hyderabad	10
46. Farooq Oil & Flour Mills, Hyderabad	10

Name of plant	Annual capacity
	Tons
47. Saleem Oil Mills, Hyderabad	10
48. Hyderabad Oil Mills, Hyderabad	40
49. Younus Oil & Flour Mills, Hyderabad	20
50. Sultan Oil Mills, Hyderabad	20
51. Nazir Oil & Flour Mills, Hyderabad	10
52. Akbar Oil Mills, Hyderabad	30
53. Sind Oil Mills, Hyderabad	1,990
54. Ashraf Oil Mills, Sukkur	20

Note: Data on Karachi District were not available at time of publication.

Suggested Specifications for Imports of Once-Refined Hydrogenated Undeodorized Soybean Oil, PAKISTAN

(1) Oil shall be free of nickel by dimethylglyoxime test

(2) FFA / maximum 0.20%

(3) Color / maximum 20 yellow 2.0 red, 5-1/4 inch column, not green

(4) Free of rancidity

(5) Composition of combined fatty acids shall be as follows:

C16 acids	-	10% maximum
C20 or higher	-	2% maximum
C18 acids	-	Balance

(6) Specified slip melting point shall be determined by +AOCS Method Cc-3-25 (Softening Point Method) Tolerance 0.50° C.

(7) Unsaponifiables 1.5% maximum

Source: Dr. Edward James, Technical Consultant, Soybean Council of America, Inc.

Capacity, output, and equipment, Pakistan's Vanaspati industry, by plant, 1961[1]

[For Key, see end of Table]

Plant	E-1	E-2	W-1	W-2
1. Seed processing:				
a. Type seed	–	–	R, C	CRP
b. Source, variety	–	–	289 F 4F–	4F, 289F
c. Capacity, daily mt.	–	–	100-150	150 R 250C
2. Seed handling and preparation:				
a. Dried	–	–	No	Yes
b. Delinted	–	–	Yes	Generally
c. Decorticated	–	–	Yes	Generally
d. Covered storage area, mt.	–	–	S-1,000	S-12,000
3. Type of operation	–	–	E	S, E
4. Products:				
a. Vegetable oil	–	–	R + C	R, C, P
b. Cake or meal	–	–	Coarse/S	Cracked/S
5. Oil processing:				
a. Products	V,C	V,C	Soap R, C	V, R, C, P
b. Output, mt. daily	8 V	10	15 V	30 V
c. Neutralization:				
(1) Batch or continuous	Cont.	B	B	Cont.
(2) Reagent	CS	CS	CS	CS
(3) Rated capacity, daily est.	15	24	20	24
d. Bleaching, vacuum or open tank	V	V	V	V
e. Winterizing	None	None	None	None
f. Hydrogenation:				
(1) Converter capacity, daily	10	12	15	20
(2) Type catalyst	N	N (F)	N	N
(3) Products	V	V	V	V
g. Hydrogen supply:				
(1) Type generator	E	E	E	E
(2) Est. hr. prod., cu. meters or feet of hydrogen	30 cu. meters	840 cu. ft.	45 cu. meters	60 cu. meters
h. Post bleaching, vacuum or open	V	V	V	O
i. Deodorization:				
(1) Type	B	B	B	B
(2) Max. temp. in deodorizer	180°C.	N/A	200°C.	180°C.
(3) Max. absolute pressure m.m. mercury	N/A	N/A	19 m.m.	7 m.m.
(4) Vacuum equipment (stage ejectors) and thermo compressor	2	2	2	N/A
(5) Capacity, daily m.t.	20	10	15	20
6. Packaging:				
a. Type and container size	S. A./ Standard	S. A./ Standard	S. A./ Standard	S. A./ Standard
7. Equipment	Rose-Downes, Deodorizer Sharpless Low Loss, refining plant	Unilever, neutralizer-bleacher	German Krupp, Deutz	Fried Krupp, Converter De Laval refining unit

W-3	W-4	W-5	W-6	W-7	W-8
C	C	—	—	CR	—
134	NTS NTR	—	—	Local	—
25	80	—	—	60	—
Yes	Yes	—	—	Yes	—
Yes	Yes	—	—	Generally	—
No	Yes	—	—	Infrequently	—
None	S-3,000	—	—	6,000	—
E	E	—	—	E	—
C	C	—	—	C,R	—
Slabs/S	Slabs/S	—	—	Mash, pellets Animal feeds S	—
Soap V,C	V	V	V	V Soap M	V
18 V	30 V 20 C 15 soap	25 V	20	40	12
B	B	B	B	B	B
CS	CS	CS	CS	CS	CS
9	30	25	15	30-40	10-12
V	V	V	V	V	V
None	None	None	None	None	None
10	30 (min.)	25	15	37	12
N	N	N	N	N	N
V	V	V	V	V	V
E	Cracking natural gas	E	E	E	E
30 cu. meters	90 cu. meters	40 cu. meters	1,614 cu. ft. per hr.	70 cu. meters	24 cu. meters
V	O	O + V	O	V	O
B	B	B	B	B	B
165°C.	200°C.	170°-180°C.	180°C.	170°-180°C.	180°C.
N/A	5 m.m.	6-8 m.m.	6-8 m.m.	8 m.m.	6-8 m.m.
2	2	2	2	2	2
18	40	27	20	33-40	10
S. A./ Standard	S. A. Standard	S. A. Standard	S. A. Standard	S. A. Standard Bakers margarine 1/2 lb. packets	S. A. Standard
Solvent equip. to be installed; H.E.B. (German) Hydrogenation unit. DEMAG Generator	French screw pressers planned. 4 HEB (German) Fritz Miller expellers. C. John Brown U.K. neutralizer Sharpless Low Loss Refining Unit Gas atmosphere Unit Inc. Hydrogenation plant	36-cell BAMAG Hydrogen unit 2 LURSI deodorizers	HEWITTIC rectifiers (U.K.) Rose-Downes-Thompson U.K. Deodorizer	Electrolytic gas plant Westinghouse Silicon rectifier 1250 AMP., 150 volts being installed	British electrodytic plant

Capacity, output, and equipment, Pakistan's Vanaspati industry, by plant, 1961[1] (Continued)

Plant	W-9	W-10	W-11
1. Seed processing:			
a. Type seed	C	C	C
b. Source, variety	4F, 289F LSS Sargent	289, LSS, 4F AC	Local
c. Capacity, daily mt.	20-40	20	150
2. Seed handling and preparation:			
a. Dried	No	Yes	Sometimes
b. Delinted	50%	No	Generally
c. Decorticated	50%	No	Yes
d. Covered storage area, mt.	S-600	S-1,000	S-3,800
3. Type of operation	E	E	E
4. Products:			
a. Vegetable oil	C	C	C
b. Cake or meal	Slabs/S	Slabs/S	Slabs/S
5. Oil processing:			
a. Products	V,C, Soap	V Soap	V, C
b. Output, mt. daily	10	10	22
c. Neutralization:			
(1) Batch or continuous	B	B	B
(2) Reagent	CS	CS	CS
(3) Rated capacity, daily est.	10	10	30-50
d. Bleaching, vacuum or open tank	V	O	V
e. Winterizing	None	None	None
f. Hydrogenation:			
(1) Converter capacity, daily	12	10	30-50
(2) Type catalyst	N(F)	N	N
(3) Products	V	V	V
g. Hydrogen supply:			
(1) Type generator	E	E	E
(2) Est. hr. prod., cu. meters or feet of hydrogen	800-900 cu.ft.per hr.	30 cu. meters	N/A
h. Post bleaching, vacuum or open	O	O	V
i. Deodorization:			
(1) Type	B	B	B
(2) Max. temp. in deodorizer	170°C.	175°C.	180°C.
(3) Max. absolute pressure m.m. mercury	8 m.m.	30 m.m.	10-12 m.m.
(4) Vacuum equipment (stage ejectors) and thermo compressor	2	N/A	2
(5) Capacity, daily m.t.	10	10-12	50
6. Packaging:			
a. Type and container size	S. A. Standard	S. A. Standard	S. A. Standard
7. Equipment	Plant capacity being expanded by Jan. 1962	Domestically produced equipment	One U.S. and domestic converter

[1]KEY.--No. 1: R = Rapeseed, C = Cottonseed, P = Peanut } all varieties are of domestic origin only.
No. 2: S = Sacked
No. 3: E = Expeller, including screen presses
S = Solvent
No. 4: R = Rapeseed oil
C = Cottonseed
S = Sacked
No. 5: V = Vanaspati (vegetable ghee)
R = Rapeseed oil
C = Cottonseed oil
M = Margarine, bakers
CS = Caustic soda
N = Nickel
N(F) = Nickel formate
E = Electrolytic
B = Batch
Cont. = Continuous
No. 6: S.A./Standard = Semiautomatic; 2, 5, 10, 35-lb. tins

Bengal Oil Mills Ltd. Abdul Rehman Bengali, Senior Director A. Sattar Bengali, Junior Director N. G. Mustafa, Manager Misbahul Ain Khan, Chief Chemist	Jodia Bazaar, Karachi
Burma Oil Mills Ltd. M. A. Rangoonwala, Chairman Abdullah A. Patni, Plant Manager M. A. Aziz, Chief Chemist	Opposite Custom House, Karachi
Crescent Factories, Ltd. Khan Zaman, Director-in-Charge Sh. Muhammad Ahmad, Manager Ch. Mukhtar Ahmad, Chief Chemist	Alnasir, Chichawatni Road
Dacca Vegetable Oil & Allied Industries M. Hanif Adamjee, Director A. K. M. N. Alam, Director S. R. Khan, Office Manager Ilyas Moten, Administrative Officer (Factory)	Adamjee Court, Dacca
E. M. Oil Mills & Industries Rafiq Gulamhusein, Director G. R. Shah, Plant Manager	3 Lakshmi Building, Karachi E-3, S.I.T.E.
Ganesh, Flour Mills John Abel, Manager Farid Alam Ansari, Factory Manager	Lyallpur
Hasni Vanaspati Manufacturing Co. Ltd. A. Hashmi, Secretary Ahmed Nini, Chief Chemist Yusuf Bhai, Factory Manager Herbert S. L. Murdock, Consultant	79 Khatunganz, Chittagong " " Solashamar, Industrial Area " " "
Hydari Industries Fidhusein J. Haja, Director Yusuf A. Habib, Director F. A. Mufti, Engineer	Insurance House, 1 Habib Square Bunder Road, Karachi Plant: Hyderabad
Lever Brothers, Pakistan Ltd. Myles Brock, Chairman (Factory) Nasir-ud-Deen, Marketing Director Arthur E. Chadwick, Technical Director John Hay, Superintendent	Rock Court, Victoria Road, Karachi Plant: Rahimyarkhan
Pakistan Oil Products Co. Mr. Saied A. Sattar, Manager	Khari Garden, Karachi 2

Maqbool Company Ltd. S. Mian M. Ahmad, Managing Director M. A. Ansari, Plant Superintendent S. Rajah Ali, Assistant Superintendent	D/5 S.I.T.E., Karachi
The Punjab Vegetable Ghee & General Mills Ltd. Mian Rashid Ahmed, Director C. F. Ning, Chief Chemist & Plant Manager Mian Rauf Ahmed, Director	Lahore c/o S.H. Mian Mohd Allah Baksh Opposite Denso Hall
Sargroh Vegetable Chee and General Mills Choudhry Mohammad Shafi, Manager	Lyallpur
Wazir Ali Industries Ltd.	Office: West Wharf, Karachi Plant: Hyderabad

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